Reed, Angel

From: Croft, Brian
Sent: Tuesday, March 02, 2010 11:16 AM
To: gaughan.perry@epa.gov
Cc: jones.katrina@epa.gov; walker.darryl@epa.gov; Johnson, Andy; Reed, Angel
Subject: TTEMI-05-001-0085_Port Wentworth Caustic Spill_ER Letter Report_Final

Perry

Tetra Tech is submitting the Final ER Letter Report for the Port Wentworth Caustic Spill. Due to the size of the file, a hard copy, including a CD containing the electronic version, is being shipped to you by FedEx for delivery Wednesday morning (3-3). The FedEx tracking number for your shipment is 7984 3588 7306.

Thanks and let me know if you need additional copies of this report.
Brian

Brian Croft | *Senior Scientist*
Main: 678.775.3113 | Fax: 678.775.3138
brian.croft@tetratech.com
Tetra Tech | Complex World, Clear Solutions (www.tetratech.com | NASDAQ:TTEK)
1955 Evergreen Boulevard, Building 200, Suite 300 | Duluth, GA 30096

TETRA TECH

March 2, 2010

Mr. Perry Gaughan
On-Scene Coordinator
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW, 11th Floor
Atlanta, Georgia 30303

Subject: **Final Emergency Response Letter Report**
Port Wentworth Caustic Spill
Port Wentworth, Chatham County, Georgia
EPA Contract No. EP-W-05-054
TDD No. TTEMI-05-001-0085

Dear Mr. Gaughan:

The Tetra Tech EM Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) is submitting this letter report summarizing emergency response activities that were conducted at the Port Wentworth Caustic Spill in Port Wentworth, Chatham County, Georgia from December 28, 2008 through January 8, 2009 (see Figure 1). Tetra Tech START was tasked to prepare a site-specific health and safety plan, conduct multimedia sampling, provide written and photographic documentation of response activities, prepare geographical information system (GIS) figures, as necessary, and prepare draft and final letter reports summarizing response activities. Appendix A provides figures illustrating the site location as well as key features and data associated with response activities. Appendix B provides tables that summarize the analytical results obtained for samples collected during response activities. Appendix C provides a photographic log of response activities. Appendix D provides a copy of the Tetra Tech START logbook notes. Appendix E provides a table of witnesses involved in response activities. Appendix F contains copies of the laboratory analytical data packages received from Analytical Environmental Services, Inc. (AES). Attachment 1 contains a certificate of analyses received from Horizon Tank Lines for the Sodium Hydroxide Membrane that they routinely transport. Attachment 2 contains a copy of the incident report prepared by the National Response Center (NRC) for this spill. Attachment 3 contains copies of the situation reports prepared by U.S. Coast Guard (USCG) representatives.

Background

On December 24, 2008, USCG Marine Safety Unit Savannah received NRC Incident Report No. 893294 involving the suspected release of approximately 3,500 gallons of sodium hydroxide into drainage ditches adjacent to and downgradient from the Horizon Tank Lines (Horizon) facility located at 306 O'Leary Road in Port Wentworth, Chatham County, Georgia (see Figure 2). Horizon provides transportation services to various clients, which include the use of over-the-road tanker trucks to transport materials such as sodium hydroxide. Reportedly, Horizon leases a portion of the property located immediately south of the impacted drainage ditch from Peterbilt Trucking.

According to the NRC incident report, the release was initially discovered by an employee of the city of Port Wentworth. Additional inspection of the area was conducted by a representative from the Georgia Department of Natural Resources Environmental Protection Division (EPD), who reported a pH value of 12 for dark liquids observed in the drainage ditch along the fence line. EPD spoke with a Horizon

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representative at the facility, who stated that he had no knowledge of a spill at that location. While the exact size of the release was not known, EPD estimated that 3,500 gallons of material were released based on the size of Horizon tanker trucks that were observed adjacent to the suspected release area. The tanker trucks were placarded as containing sodium hydroxide.

USCG personnel responded to the scene during the evening of December 24 and based on observations and the potential threat to navigable waterways issued a Notice of Federal Interest to Horizon. Horizon continued to deny responsibility for the release and USCG initiated cleanup efforts. USCG obtained emergency funding from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) using the Ceiling and Number Assignment Processing System (CANAPS) and mobilized Moran Environmental Recovery (MER) personnel and equipment to the scene. On December 24 and 25, MER utilized vacuum trucks and an excavator to pump free liquids and remove contaminated soil from the affected areas, which included the fence line and O'Leary Road ditches. Contaminated soil was placed into eight rolloff containers, which were transported to MER's local facility along with the vacuum trucks for temporary storage. During these operations, a total of approximately 2,500 gallons of liquids and 140 cubic yards of soil were removed from the ditches. After these operations were completed, USCG observed additional free liquids that resurfaced in the ditches and decided to resume removal activities the following day.

On December 26, MER excavated a series of collection sumps in the fence line and O'Leary Road ditches to facilitate the recovery of free liquids using a vacuum truck. MER also constructed an earthen dam at the northern end of the O'Leary Road ditch where it merges with a water-filled creek to contain potentially contaminated drainage water. In addition, EPD collected two samples from the fence line ditch for laboratory analyses at the USCG MSU Savannah Oil Spill Removal Organization (OSRO) laboratory. At the time of this report, the analytical results for these samples were not available to Tetra Tech START; however, USCG situation reports indicated that the results were consistent with sodium hydroxide.

At the request of USCG representatives, EPA On-Scene Coordinator (OSC) Perry Gaughan responded to the scene on December 26, 2008 and observed dark liquids with elevated pH remaining in the fence line and O'Leary Road ditches. OSC Gaughan contacted local and corporate representatives of Horizon, who continued to deny responsibility for the release. USCG continued to use MER to periodically remove free liquids from the ditches. On December 28, 2008, EPA requested Tetra Tech START to mobilize personnel and resources to the site to conduct multimedia sampling and provide documentation of response activities.

Emergency Response Activities

Tetra Tech START arrived at the site on the morning of December 29, 2008 and met with OSC Gaughan and USCG representatives. During a walkthrough of the area, personnel observed numerous pools of the dark liquids at various locations in the fence line and O'Leary Road ditches. Tetra Tech START performed field testing to measure the pH of the dark liquid at various locations along the affected ditches. Measurements indicated the following readings: a pH of 13 was identified in the collection sump excavated at the suspected point of entry in the fence line ditch approximately 10 feet north of the Horizon Tank Lines facility, which corresponds to field testing location FT-20; and a pH reading of 10 to 11 was identified in the O'Leary Road ditch at its confluence with the fence line ditch; which corresponds to field testing location FT-6 (see Figure 2). MER representatives continued to use a vacuum truck to periodically removed free liquids from the ditches. Liquids were transferred to a frac tank that was staged in the open area north of the Horizon facility.

During initial response activities, the following waste and soil samples were collected and delivered to AES for laboratory analyses:

- PWC-WS-01: Liquid waste sample collected from the suspected point of entry (FT-20) in the fence line ditch, including the collection of a field duplicate sample (PWC-WS-01D) and a split sample that was provided to Horizon. Laboratory analyses requested for this sample include volatile organic compounds (VOC), semivolatile organic compounds (SVOC), chlorinated pesticides, chlorinated herbicides, Target Analyte List (TAL) metals, sulfides, and pH.
- PWC-WS-02: Liquid waste sample collected from the O'Leary Road ditch at its confluence with the fence line ditch; this location corresponds with field testing location FT-6. Laboratory analyses requested for this sample include VOCs, SVOCs, chlorinated pesticides, chlorinated herbicides, TAL metals, sulfides, and pH.
- PWC-WS-03: Liquid waste sample collected from a Horizon tanker truck containing material routinely hauled by the company and identified as 50 percent sodium hydroxide. Appendix F contains a certificate of analyses received from Horizon for this material. Laboratory analyses requested for this sample include VOCs, SVOCs, chlorinated pesticides, chlorinated herbicides, TAL metals, sulfides, and pH.
- PWC-S-01: Background soil sample collected from the fence line ditch at a point upgradient of the suspected point of entry; this location corresponds with field testing location FT-21. Laboratory analyses requested for this sample include TAL metals, sulfides, and pH.
- PWC-S-02: Background soil sample collected from the O'Leary Road ditch at a point upgradient of the suspected point of entry; this location corresponds with field testing location FT-2. Laboratory analyses requested for this sample include TAL metals, sulfides, and pH.

Appendix B provides tables that summarize the analytical results for samples collected during response activities. Appendix G contains copies of the laboratory analytical data packages obtained from AES. Analytical data indicated the presence of elevated pH and high concentrations of sodium in waste sample PWC-WS-01 (fence line ditch), which is consistent with the presence of sodium hydroxide. In addition, correlation exists between the analytical data for waste samples PWC-WS-01 and PWC-WS-03 (Horizon tanker truck), which suggests a high level of similarity between the two materials. This correlation is strengthened considering the low sodium concentrations identified in background soil samples, which indicate no obvious upgradient source of the high concentrations of sodium identified in waste sample PWC-WS-01.

On December 30, 2008, EPA directed Tetra Tech START to demobilize from the site while MER continued periodic pumping activities to remove elevated pH liquids from the ditches that continued to resurface. OSC Gaughan and USCG later observed a white residual material forming on the surface of the fence line and O'Leary Road ditches. Measurements using field test strips indicated pH readings up to 13 for the white residual material and up to 12 for soil in the ditches. On December 31, 2008, EPA issued a Notice of Federal Interest to Horizon. OSC Gaughan subsequently mobilized WRSCompass, Inc. (WRS), the Emergency and Rapid Response Services contractor, and requested Tetra Tech START to return to the site on January 5, 2009 to conduct further response activities.

Upon returning to the site, OSC Gaughan directed WRS personnel to conduct additional excavation along the affected ditches to remove contaminated soil. Prior to excavation, Tetra Tech START collected soil samples from the ditches to document the existing pH of the affected areas as well as upgradient locations in both the fence line and O'Leary Road ditches. Soil samples were collected in glass jars and distilled water was added to create a liquid solution for field testing. Figure 2 illustrates the field testing locations and the corresponding pH readings obtained prior to excavation, which generally indicate neutral pH values upgradient of the release area and elevated pH values downgradient of the release area.

From January 6 through January 8, 2009, WRS excavated soil from the fence line and O'Leary Road ditches. Approximately 6 to 12 inches of soil was excavated along an estimated 150 linear feet of the fence line ditch and along an estimated 650 linear feet of the O'Leary Road ditch. Excavated soil was transferred to rolloff containers pending receipt of waste profile analyses for disposal purposes. During excavation activities, Tetra Tech START conducted confirmation field testing to document pH measurements after soil removal. Confirmation field testing indicated pH readings that ranged from 7 to 9; however, elevated pH readings remained in the some areas, particularly at the suspected point of entry in the fence line ditch (FT-20) and at the confluence of the fence line and O'Leary Road ditches (FT-6).

During response activities, confirmation soil samples were also collected for laboratory analyses to document post-excavation conditions within the ditches. Figure 2 of Appendix A provides additional detail regarding the locations of these samples. The following provides a summary of these samples:

- PWC-S-03: Soil sample collected from a depth of approximately 8 feet below ground surface (bgs) in test pit number 1 (TP-1), which was excavated west of the suspected point of entry to investigate other potential sources of contamination. No visible signs of contamination were observed. Laboratory analyses requested for this sample include SVOCs, chlorinated pesticides, chlorinated herbicides, TAL metals, sulfides, and pH.
- PWC-S-04: Soil sample collected from a depth of approximately 10 feet below ground surface (bgs) in test pit number 2 (TP-2), which was excavated north of the suspected point of entry to investigate other potential sources of contamination. No visible signs of contamination were observed. Laboratory analyses requested for this sample include SVOCs, chlorinated pesticides, chlorinated herbicides, TAL metals, sulfides, and pH.
- PWC-S-05: Soil sample collected from the O'Leary Road ditch at its confluence with the fence line ditch prior to excavation activities. This location corresponds with field testing location FT-6. Laboratory analyses requested for this sample include SVOCs, chlorinated pesticides, chlorinated herbicides, TAL metals, sulfides, and pH.
- PWC-S-06/PWC-S-07: Soil sample, including the collection of a field duplicate sample (PWC-S-07), collected from the fence line ditch at the suspected point of entry prior to excavation activities. This location corresponds with field testing location FT-20. Laboratory analyses requested for this sample include SVOCs, chlorinated pesticides, chlorinated herbicides, TAL metals, sulfides, and pH.
- PWC-S-08: Five-point composite soil sample collected from the O'Leary Road ditch at locations downgradient of its confluence with the fence line ditch following completion of excavation activities. Laboratory analyses requested for this sample include SVOCs, chlorinated pesticides, chlorinated herbicides, TAL metals, sulfides, and pH.

Appendix B contains tables that summarize the analytical results for samples collected during response activities. Appendix F contains copies of the laboratory analytical data packages obtained from AES, including data validation reports prepared by Tetra Tech START. Analytical data indicated the presence of elevated pH and high concentrations of sodium in soil sample PWC-S-05 (O'Leary Road ditch at field testing location FT-6) as well as PWC-S-06 and PWC-S-07 (field duplicate samples collected from the fence line ditch at field testing location FT-20). These results are consistent with the presence of sodium hydroxide. In addition, this correlation is strengthened considering the low sodium concentrations identified in background soil samples, which indicate no obvious upgradient source of the high concentrations of sodium identified.

Upon completion of excavation activities, WRS personnel installed two collection sumps to aid in future liquid recovery operations to be conducted by WRS and MER representatives. One sump was installed at the suspected point of entry (FT-20) and one sump was installed at the confluence of the fence line and

O'Leary Road ditches (FT-6). Each sump consisted of a small excavation filled with a slotted piece of corrugated plastic pipe that was surrounded with stone to facilitate drainage and allow for periodic removal of accumulated liquids.

On January 8, 2009, Tetra Tech START demobilized from site. At the time of demobilization, a total of 12 rolloff containers and 1 frac tank (approximately one-quarter full) were staged in the open area north of the Horizon facility pending finalization of transportation and disposal arrangements.

If you have any questions or need additional copies of this report, please contact me at (678) 775-3113.

Sincerely,

Brian Croft
Tetra Tech START III Site Manager

Andrew F. Johnson
Tetra Tech START III Program Manager

Enclosures (Nine)

cc: Katrina Jones, EPA Project Officer
Darryl Walker, EPA Alternate Project Officer
Angel Reed, START III Document Control Coordinator

APPENDIX A

FIGURES

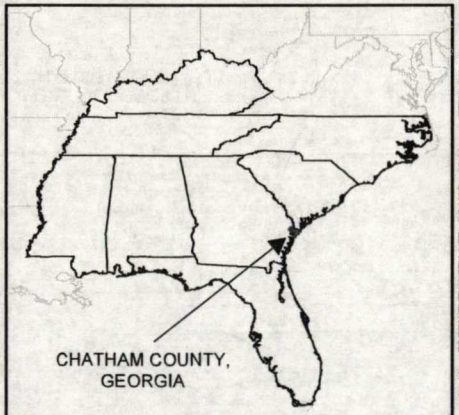
(Two Pages)

N

0 500 1,000 Feet

1:12,000

MAP SOURCE:
USGS, PORT WENTWORTH, GA-SC
TOPOGRAPHIC QUADRANGLE, 1982



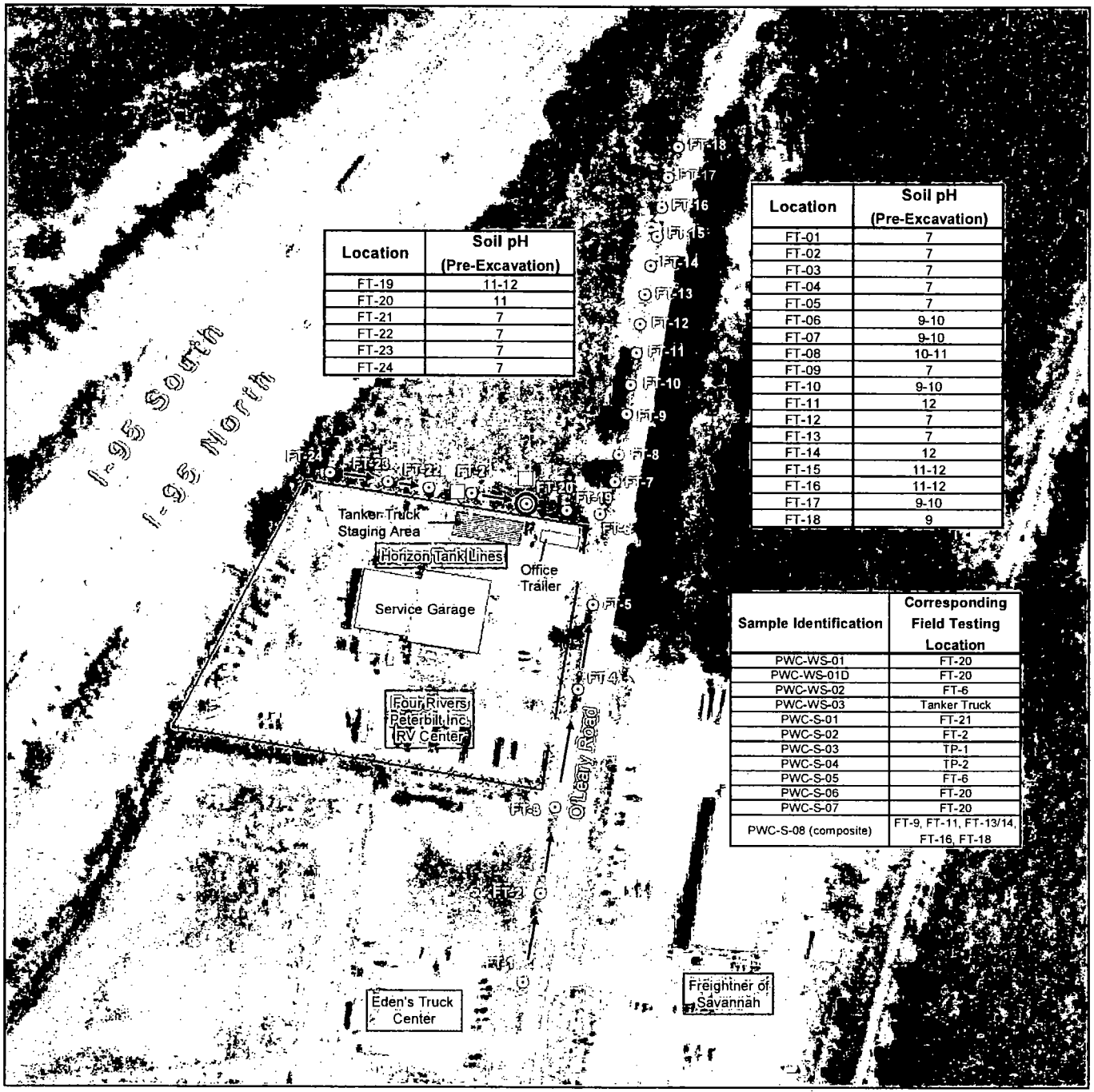
United States Environmental Protection Agency

PORT WENTWORTH CAUSTIC SPILL
PORT WENTWORTH,
CHATHAM COUNTY,
GEORGIA
TDD No.TTEMI-05-001-0085

FIGURE 1
SITE LOCATION

TETRA TECH

2009-01-08 \GIS Workspace\TTEMI-05-001-0085 Port Wentworth Caustic Spill\Figures\GIS\MXD\Site Location Maps\PORT WENTWORTH SITE LOC MAP 1-08-09.mxd TTEMI-KY data.vonbusch



Location	Soil pH (Pre-Excavation)
FT-19	11-12
FT-20	11
FT-21	7
FT-22	7
FT-23	7
FT-24	7

Location	Soil pH (Pre-Excavation)
FT-01	7
FT-02	7
FT-03	7
FT-04	7
FT-05	7
FT-06	9-10
FT-07	9-10
FT-08	10-11
FT-09	7
FT-10	9-10
FT-11	12
FT-12	7
FT-13	7
FT-14	12
FT-15	11-12
FT-16	11-12
FT-17	9-10
FT-18	9

Sample Identification	Corresponding Field Testing Location
PWC-WS-01	FT-20
PWC-WS-01D	FT-20
PWC-WS-02	FT-6
PWC-WS-03	Tanker Truck
PWC-S-01	FT-21
PWC-S-02	FT-2
PWC-S-03	TP-1
PWC-S-04	TP-2
PWC-S-05	FT-6
PWC-S-06	FT-20
PWC-S-07	FT-20
PWC-S-08 (composite)	FT-9, FT-11, FT-13/14, FT-16, FT-18

Legend

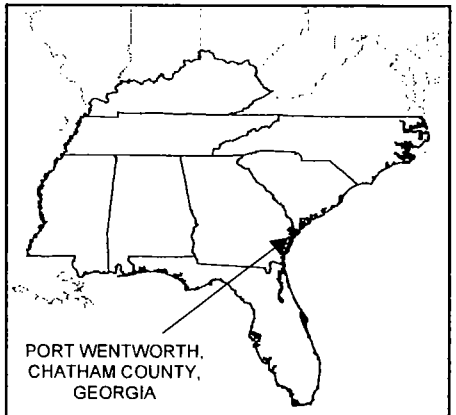
- Street
- Flow Direction
- Fence
- Structure
- Test Pit
- Staging Area
- Field Testing Location
- Suspected Point of Entry

N

0 150 300 Feet

1:3,000

MAP SOURCE: GlobeExplorer/Image Connect 2009



United States Environmental Protection Agency

PORT WENTWORTH CAUSTIC SPILL
PORT WENTWORTH,
CHATHAM COUNTY,
GEORGIA
TDD No.TTEMI-05-001-0085

FIGURE 2
SITE LAYOUT

TETRA TECH

2009-01-10 - GIS Workspace\TTEMI-05-001-0085_Port_Wentworth_Caustic_Spill\Figures\GIS\MXD\Site Layout and Sample Locations\PORT WENTWORTH SITE LAYOUT SMPL LOC MAP 1-09-09.mxd TTEMI-KAY courtney.eden

APPENDIX B

TABLES

(Two Pages)

TABLE 1
ANALYTICAL SUMMARY FOR WASTE SAMPLES
PORT WENTWORTH CAUSTIC SPILL

Sample Designation:	PWC-WS-01	PWC-WS-01 D	PWC-WS-02	PWC-WS-03
Sample Collection Date:	12/29/2008	12/29/2008	12/29/2008	12/30/2008
Field Quality Control:		Field Duplicate		
Metals (mg/kg)				
Aluminum	**110**	**110**	43 U	44 U
Potassium	81 UJ	97 UJ	87 UJ	**200**
Sodium	**8100 J+**	**8300 J+**	**280 J+**	**260000 J+**
Vanadium	**6.0**	**6.7**	4.3 U	4.4 U
Miscellaneous Parameters				
Density (gm/mL)	**1.02**	**1.01**	**0.977**	**1.55**
pH (pH Units)	**12.3**	**12.4**	**8.83**	**13.6**

Notes:

Positive results are listed in **BOLD**.

gm/mL = Grams per milliliter

mg/kg = Milligrams per kilogram

J+ = The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and possibly biased high.

U = The analyte was analyzed for, but was not detected at or above the associated value.

UJ = The analyte was analyzed for, but was not detected at or above the associated value, which is considered approximate due to deficiencies in one or more quality control criteria.

TABLE 2
ANALYTICAL SUMMARY FOR SOIL SAMPLES
PORT WENTWORTH CAUSTIC SPILL

Sample ID:	PWC-S-01	PWC-S-02	PWC-S-3	PWC-S-4	PWC-S-5	PWC-S-6	PWC-S-7	PWC-S-8
Location:	Fence Line Bkgd	O'Leary Rd Bkgd	Test Pit 1	Test Pit 2	O'Leary Rd@FT-6	Fence Line	Fence Line	O'Leary Rd-Comp
Collection Date:	12/30/2008	12/30/2008	1/7/2009	1/7/2009	1/8/2009	1/8/2009	1/8/2009	1/8/2009
Percent Moisture (percent)								
Percent Moisture	**15.2**	**33.4**	**14.8**	**15.8**	**18.6**	**29.5**	**32.3**	**5.10**
Metals (mg/kg)								
Aluminum	**2010**	**2340**	**4220**	**3580**	**3020**	**8320**	**6780**	**5130**
Antimony	4.14 UJ	7.4 UJ	5.38 UJ	5.30 UJ	5.95 UJ	6.06 UJ	5.43 UJ	**0.223 J-**
Arsenic	**0.614 J**	**0.670 J**	**0.809 J**	**0.650 J**	**1.25 J**	**1.21 J**	**1.61 J**	**2.24 J**
Barium	**10.2**	**19.8**	**26.0**	**40.4**	**8.87**	**31.9**	**26.1**	**22.5**
Beryllium	2.07 U	3.7 U	2.69 U	**0.0425 J**	2.97 U	**0.0424 J**	**0.0356 J**	**0.0159 J**
Cadmium	**0.0470 J**	**0.0873 J**	2.69 U	2.65 U	**0.0604 J**	3.03 U	2.72 U	**0.0482 J**
Calcium	**458**	**1710**	**67.8**	**84.7**	**974**	**406**	**232**	**704**
Chromium	**3.25**	**3.72**	**5.53**	**5.65**	**2.95 J**	**9.39**	**7.72**	**8.88**
Cobalt	**0.0910 J**	**0.607 J**	**0.122 J**	**0.174 J**	**0.292 J**	**0.363 J**	**0.316 J**	**0.409 J**
Copper	2.07 U	**6.40**	**1.02 J-**	**0.843 J-**	**3.53**	**0.731 J-**	**0.625 J-**	**1.94 J-**
Iron	**1270**	**3440**	**2300**	**5160**	**2280**	**4630**	**4110**	**12700**
Lead	**9.80**	**6.99 J**	**4.80 J**	**6.38**	**3.69 J**	**9.21**	**8.96**	**9.51**
Magnesium	**61.1**	**314**	**153**	**261**	**174**	**408**	**297**	**237**
Manganese	**4.66**	**46.8**	**0.881 J**	**0.752 J**	5.95 U	**2.26 J**	**2.29 J**	**17.5**
Mercury	**0.0607 J**	**0.00925 J**	0.117 U	0.119 U	**0.00961 J**	0.141 U	**0.00622 J**	**0.0266 J**
Potassium	**119**	**275**	108 UJ	**110**	**166**	**181**	**140**	**122**
Selenium	**0.544 J**	**0.917 J**	5.38 U	5.30 U	5.95 U	**0.644 J**	5.43 U	**0.965 J**
Sodium	82.8 U	148 U	**9.96 J-**	**25.8 J-**	**44900**	**9600**	**7880**	**2200**
Vanadium	**4.71**	**9.30**	**7.83**	**8.36**	**10.5**	**14.3**	**13.6**	**16.9**
Zinc	**9.56**	**30.6**	5.38 U	5.30 U	**14.1**	6.06 U	5.43 U	**7.95**
Miscellaneous Parameters								
Sulfide (mg/kg)	**70.9 J**	**90.3 J**	**141**	47.5 U	49.1 U	56.7 U	59.1 U	42.2 U
pH (pH Units)	**5.45**	**6.58**	**4.5**	**5.0**	**11**	**11**	**11**	**9.6**

Notes:

Positive results are listed in **BOLD**.

Bkgd = background

Comp = composite sample

mg/kg = Milligrams per kilogram

J- = The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.

J = The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected at or above the associated value.

UJ = The analyte was analyzed for, but was not detected at or above the associated value, which is considered approximate due to deficiencies in one or more quality control criteria.

APPENDIX C

PHOTOGRAPHIC LOG

(15 Pages)

OFFICIAL PHOTOGRAPH NO. 1
U.S. ENVIRONMENTAL PROTECTION AGENCY

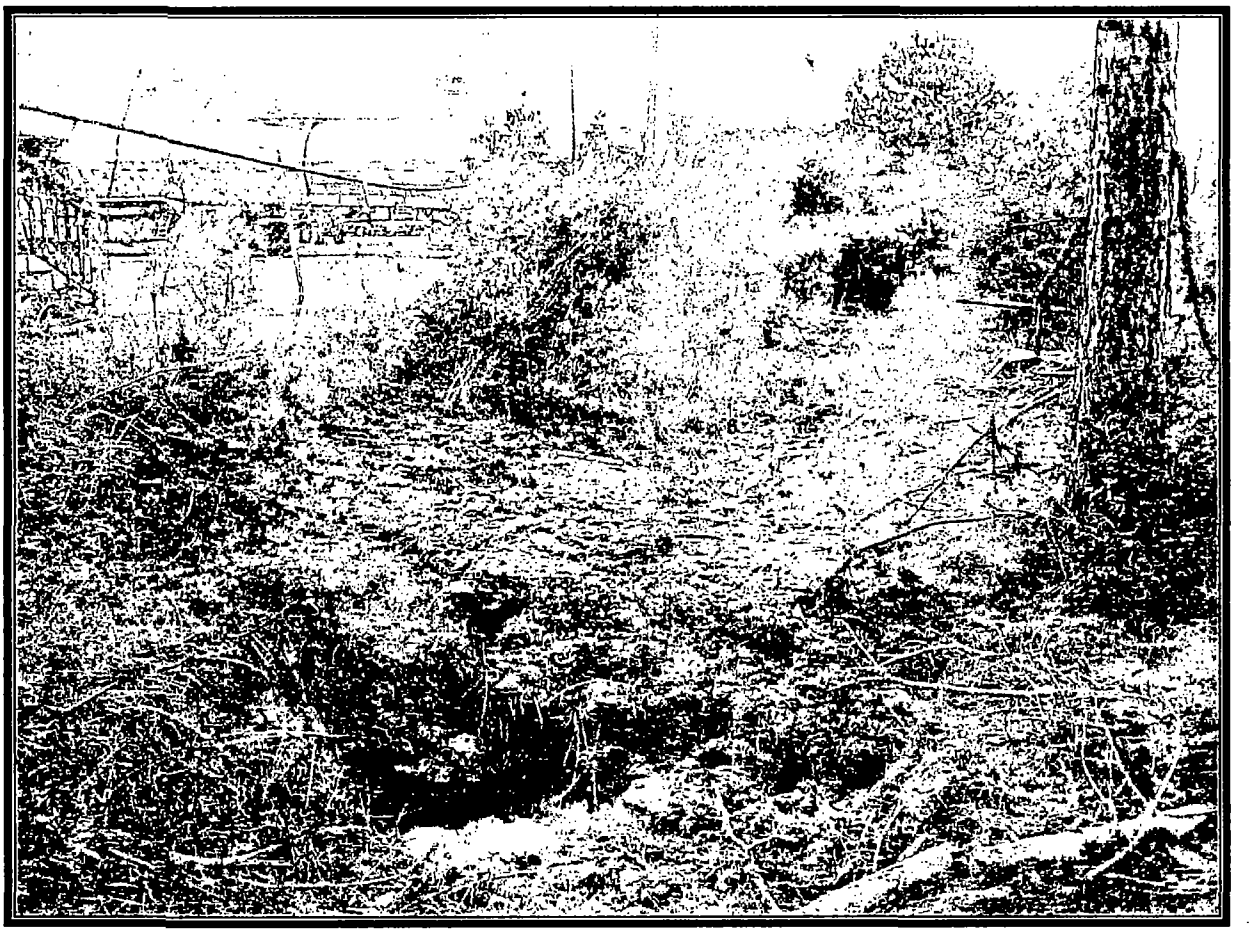
TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	South	**Date:**	December 29, 2008
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Quinn Kelley, Tetra Tech START

Subject: Suspected point of entry in the fence line ditch along the north side of the Horizon Tank Lines facility. This location corresponds to field testing location FT-20. Note the dark liquid in the bottom of the trench. Field testing conducted by Tetra Tech START indicated a pH of 13 for the liquid.

OFFICIAL PHOTOGRAPH NO. 2
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	Not applicable	**Date:**	December 29, 2008
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Quinn Kelley, Tetra Tech START

Subject: Suspected point of entry in the fence line ditch along the north side of the Horizon Tank Lines facility. This location corresponds to field testing location FT-20. Note the dark liquid in the bottom of the trench. Field testing conducted by Tetra Tech START indicated a pH of 13 for the liquid.



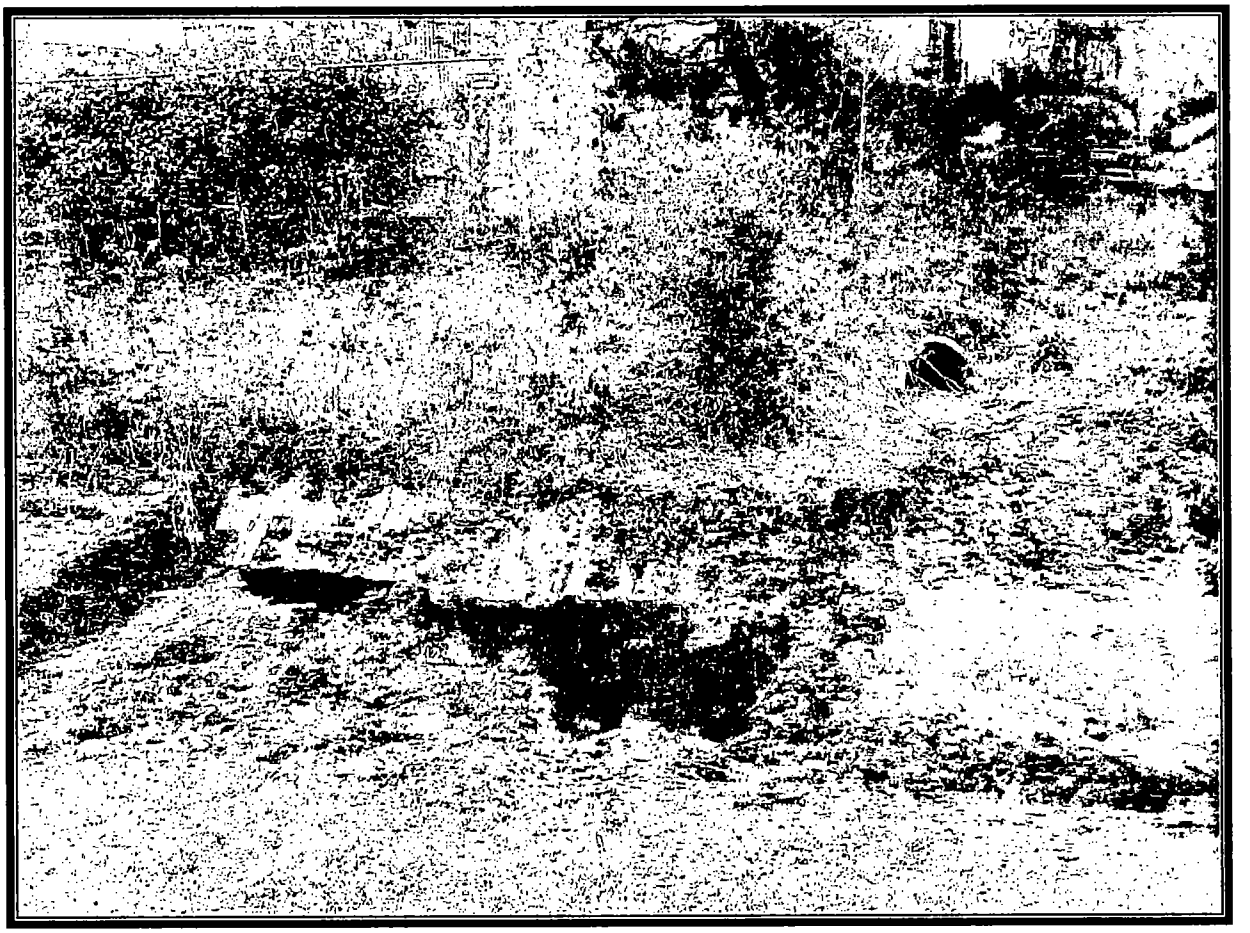
OFFICIAL PHOTOGRAPH NO. 3
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	West	**Date:**	December 29, 2008
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Quinn Kelley, Tetra Tech START

Subject: The fence line ditch along the north side of the Horizon Tank Lines facility. Initial excavation activities were performed by Moran Environmental Recovery under contract to the U.S. Coast Guard. Soil berms were left in place at various locations along the affected ditch lines to contain potential future releases.

OFFICIAL PHOTOGRAPH NO. 4
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	North	**Date:**	December 29, 2008
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Quinn Kelley, Tetra Tech START
Subject:	The O'Leary Road ditch at the confluence with the fence line ditch following initial excavation activities that were performed by Moran Environmental Recovery under contract to the U.S. Coast Guard.		



OFFICIAL PHOTOGRAPH NO. 5
U.S. ENVIRONMENTAL PROTECTION AGENCY

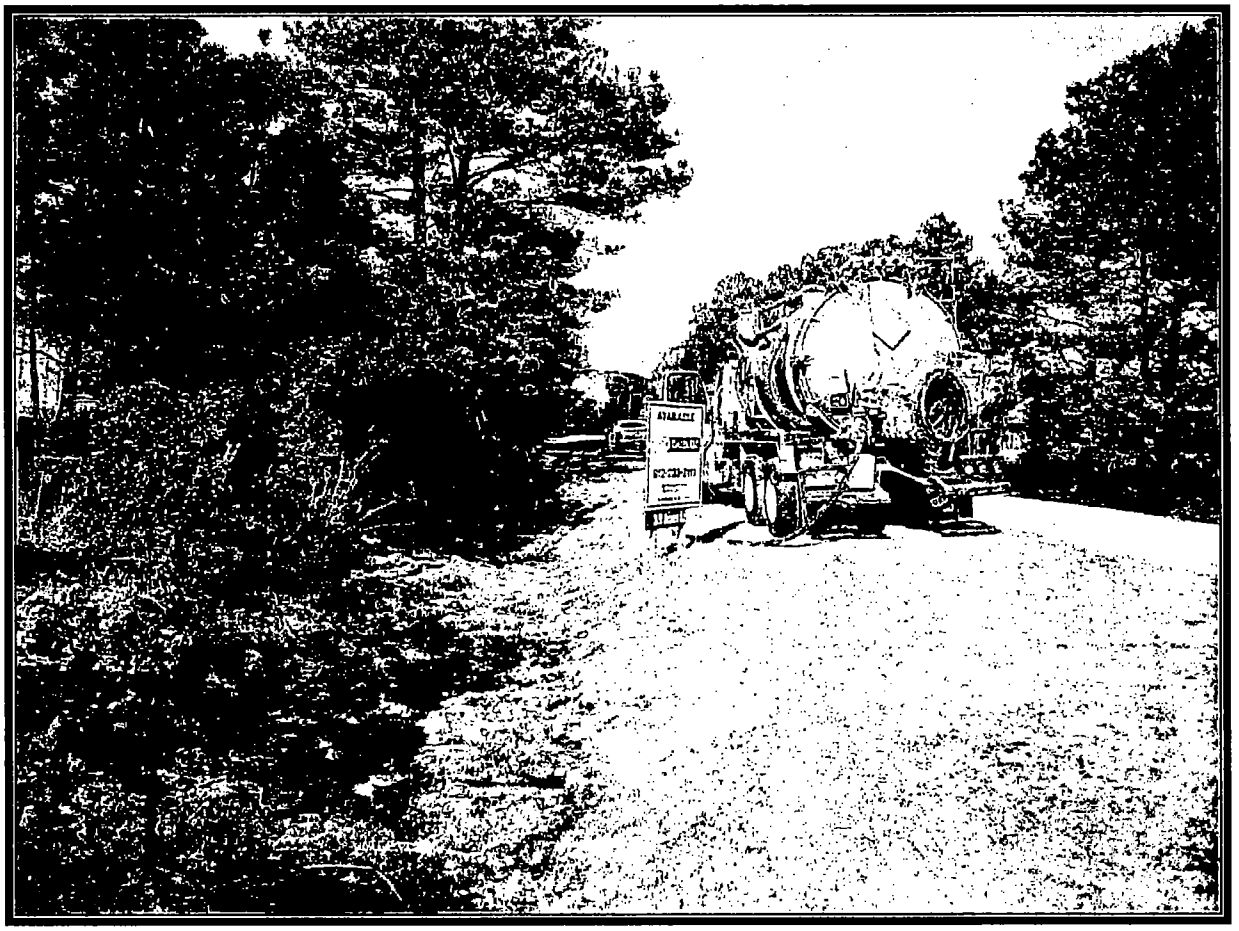
TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	West	**Date:**	December 29, 2008
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Quinn Kelley, Tetra Tech START

Subject: Confluence of the fence line and O'Leary Road ditches. This location corresponds to field testing location FT-6. Note the dark liquid at the bottom of the ditch. Field testing conducted by Tetra Tech START indicated a pH of 10 to 11 for the liquid.

OFFICIAL PHOTOGRAPH NO. 6
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	Northwest	**Date:**	January 5, 2009
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Perry Gaughan, EPA Region 4 OSC

Subject: O'Leary Road ditch downgradient from its confluence with the fence line ditch. Note the white residual material that formed on the surface as well as remaining pools of dark liquid. Field testing conducted by Tetra Tech START indicated a pH of 12 to 13 for the white residual material.



OFFICIAL PHOTOGRAPH NO. 7
U.S. ENVIRONMENTAL PROTECTION AGENCY

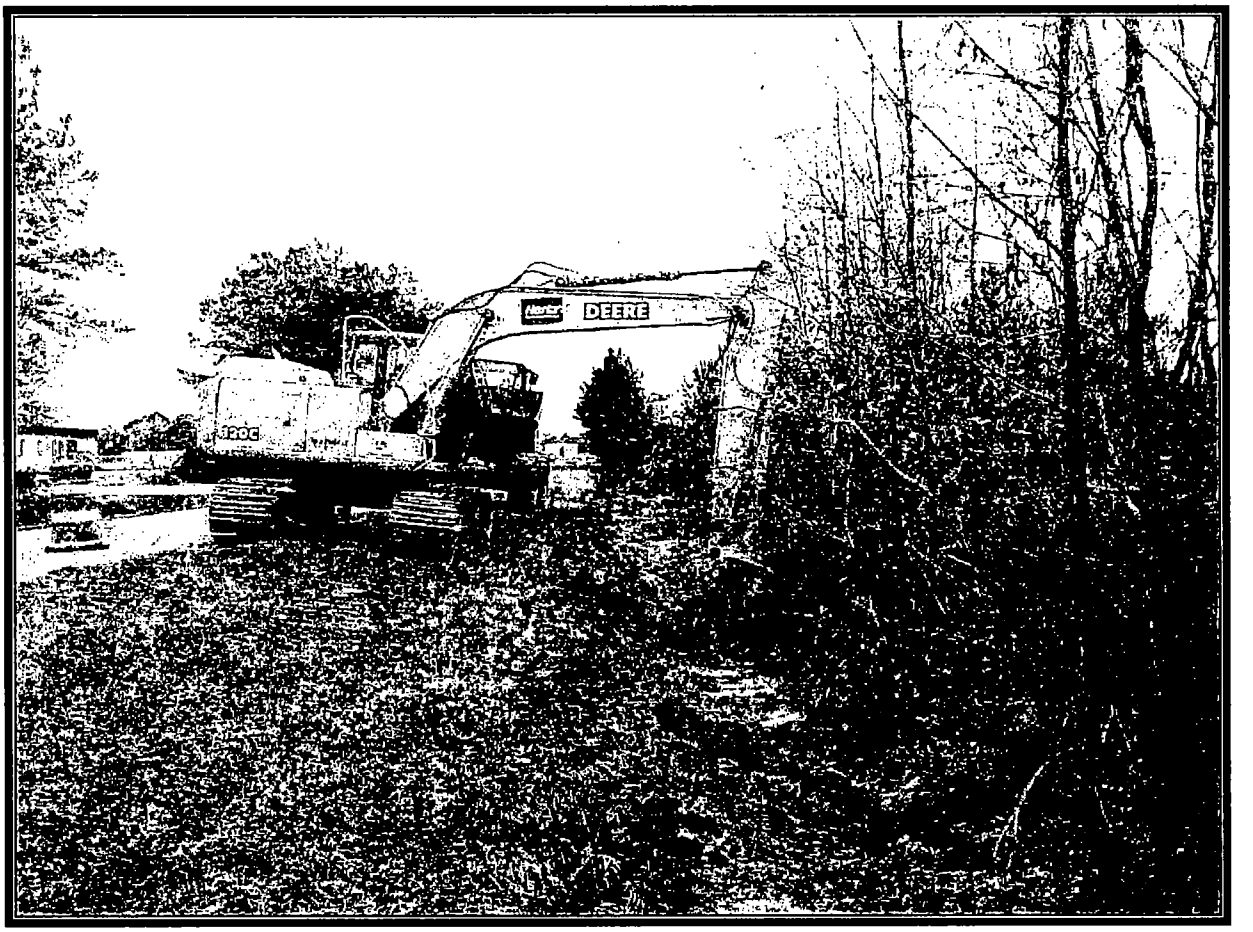
TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	North	**Date:**	January 5, 2009
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Perry Gaughan, EPA Region 4 OSC

Subject: Moran Environmental Recovery representatives using a vacuum truck to remove pools of the dark liquid from the O'Leary Road ditch. Vacuum truck activities were performed daily as necessary to remove liquids that continued to seep from the ground. Liquids were transferred to a frac tank staged at the site pending finalization of transportation and disposal arrangements.

OFFICIAL PHOTOGRAPH NO. 8
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	South	**Date:**	Perry Gaughan, EPA Region 4 OSC
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Quinn Kelley, Tetra Tech START

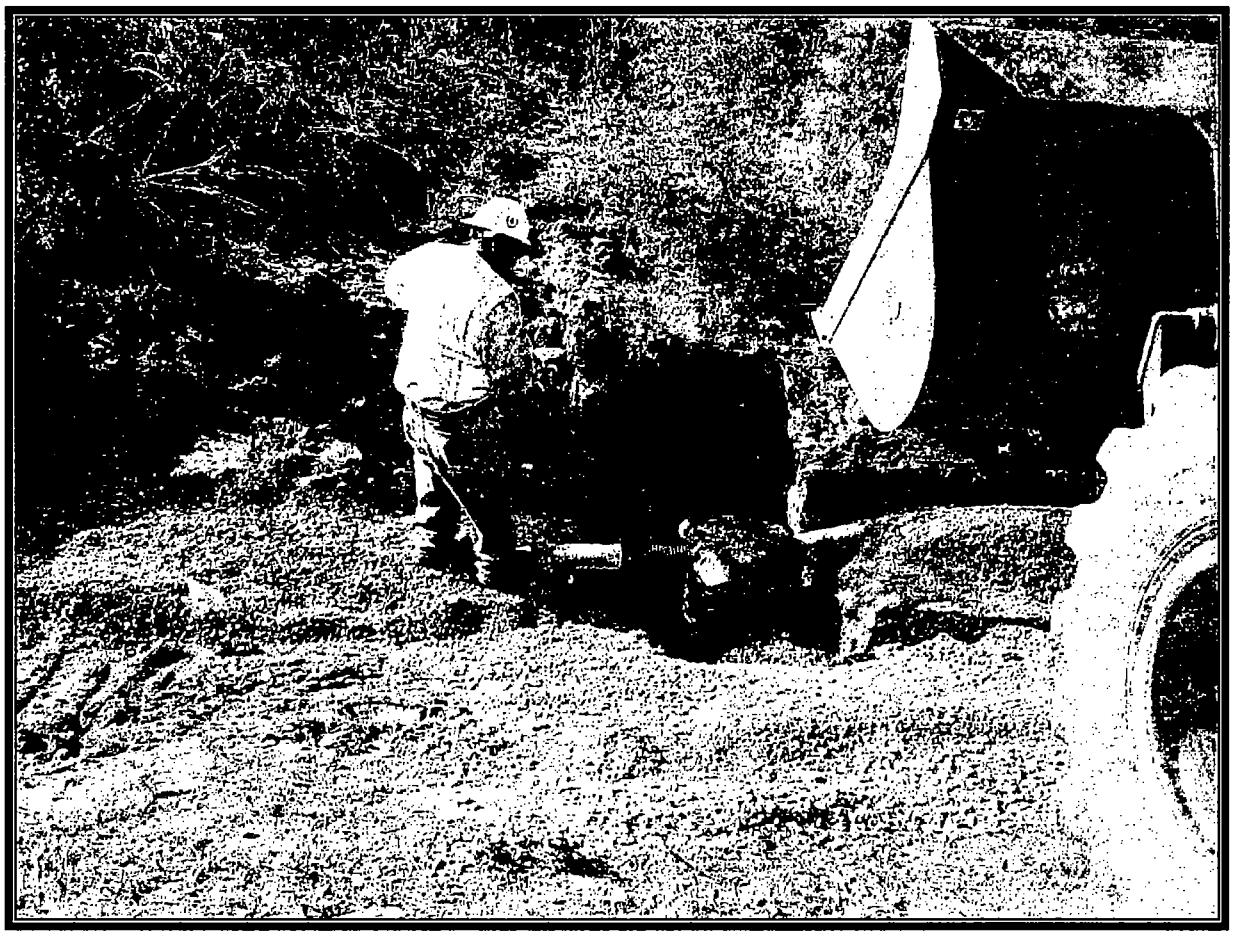
Subject: O'Leary Road ditch downgradient from its confluence with the fence line ditch. Note the white residual material that formed on the surface. Field testing conducted by Tetra Tech START indicated a pH of 12 to 13 for the white residual material.



OFFICIAL PHOTOGRAPH NO. 9
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	South	**Date:**	January 7, 2009
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Perry Gaughan, EPA Region 4 OSC

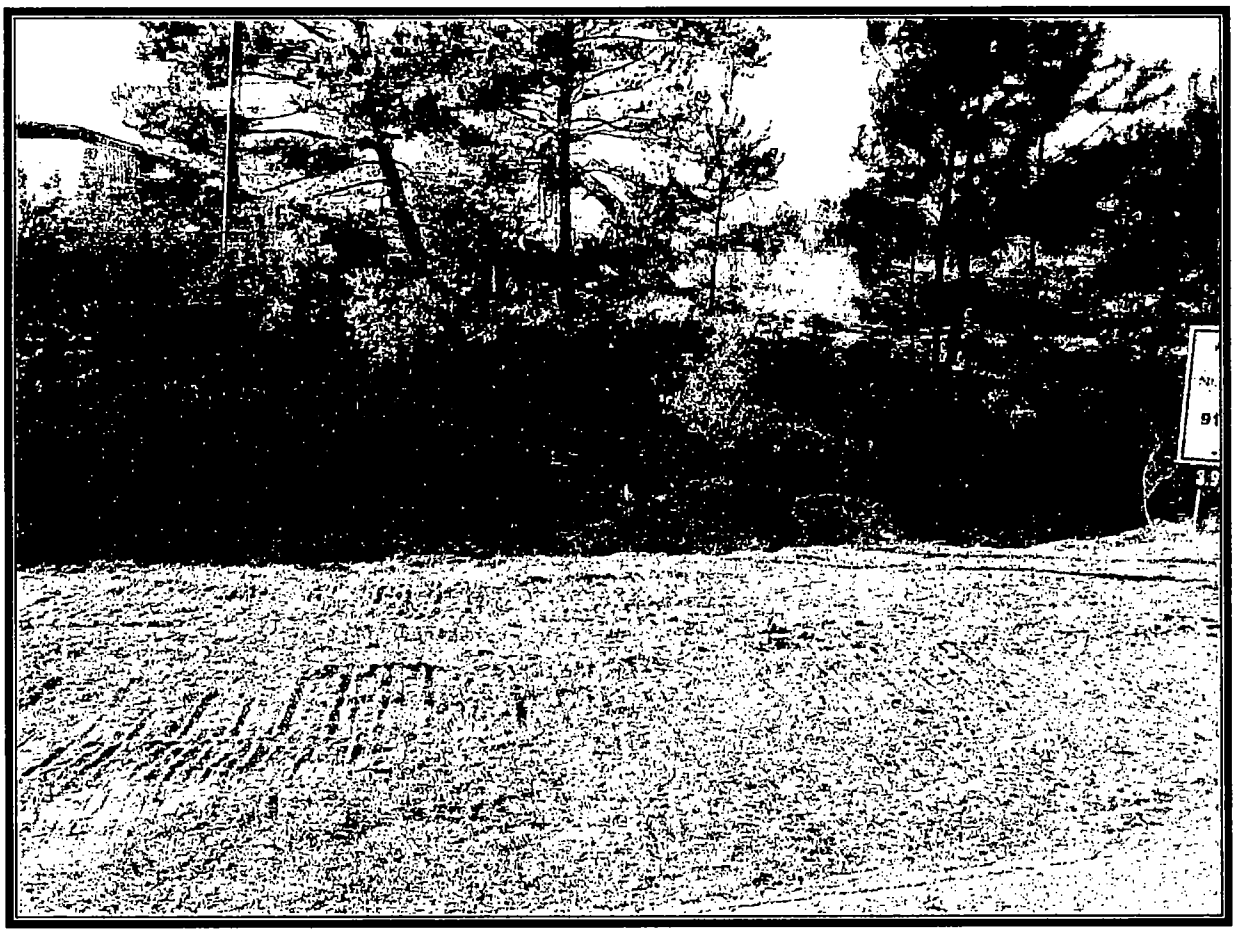
Subject: WRSCompass personnel excavating soil from the O'Leary Road ditch. The pin flags correspond to field testing locations in the ditch used to monitor the effectiveness of removal activities.



OFFICIAL PHOTOGRAPH NO. 10
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	West	**Date:**	January 8, 2009
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Perry Gaughan, EPA Region 4 OSC

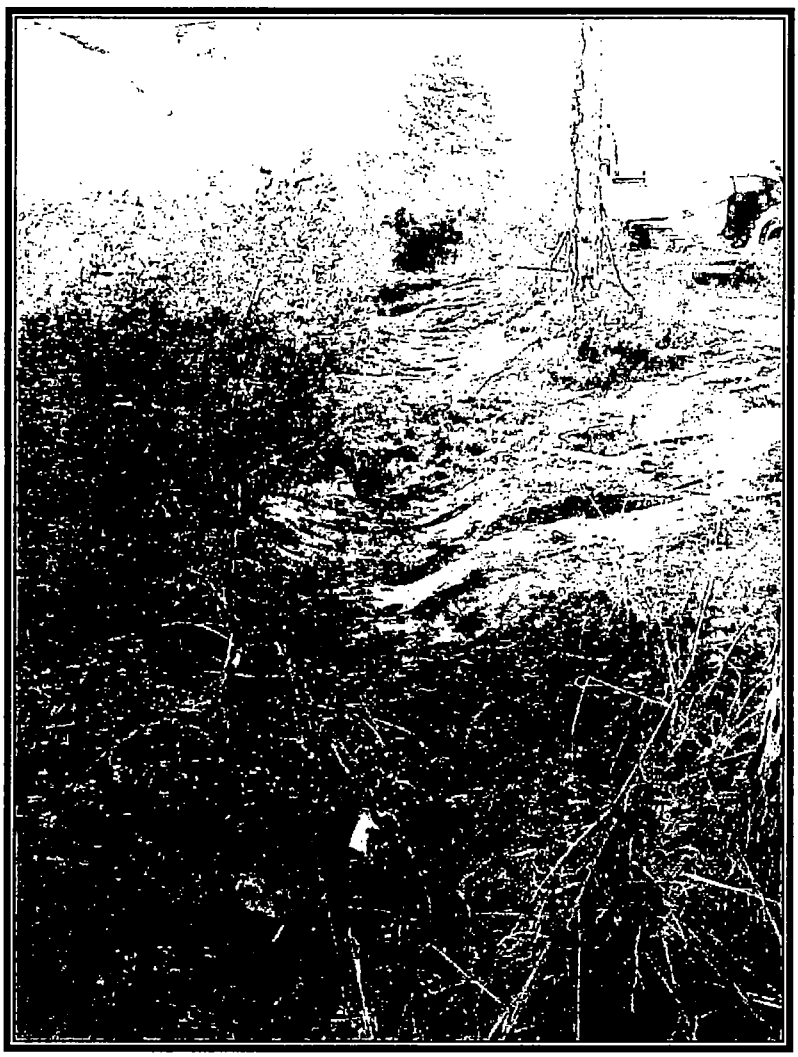
Subject: WRSCompass personnel installing a recovery sump in the O'Leary Road ditch at its confluence with the fence line ditch to facilitate the recovery and removal of caustic liquids that continued to seep from the ground following excavation activities.



OFFICIAL PHOTOGRAPH NO. 11
U.S. ENVIRONMENTAL PROTECTION AGENCY

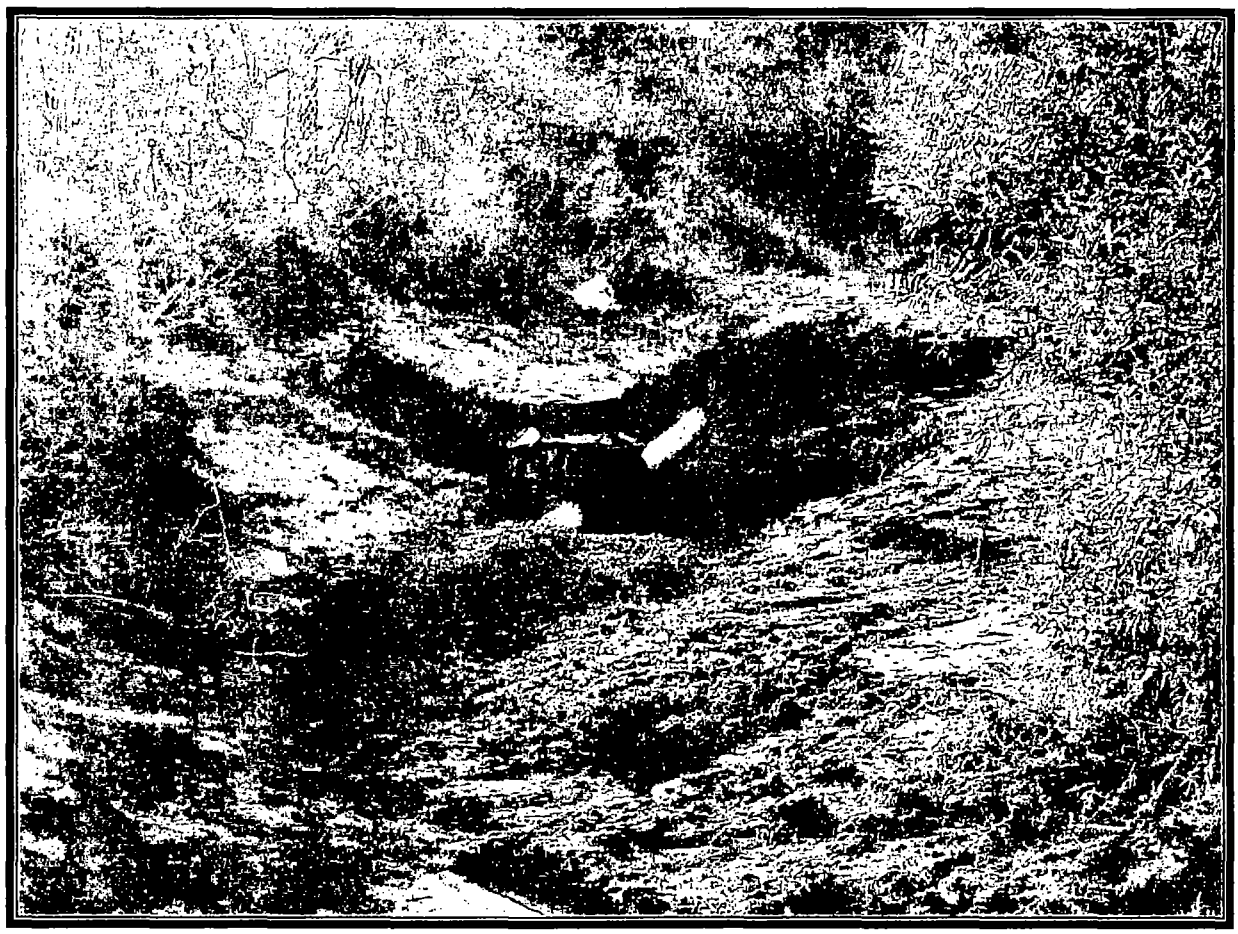
TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	West	**Date:**	January 8, 2009
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Perry Gaughan, EPA Region 4 OSC

Subject: Completed recovery sump installed in the O'Leary Road ditch at its confluence with the fence line ditch to facilitate the recovery and removal of caustic liquids that continued to seep from the ground following excavation activities.



OFFICIAL PHOTOGRAPH NO. 12
U.S. ENVIRONMENTAL PROTECTION AGENCY

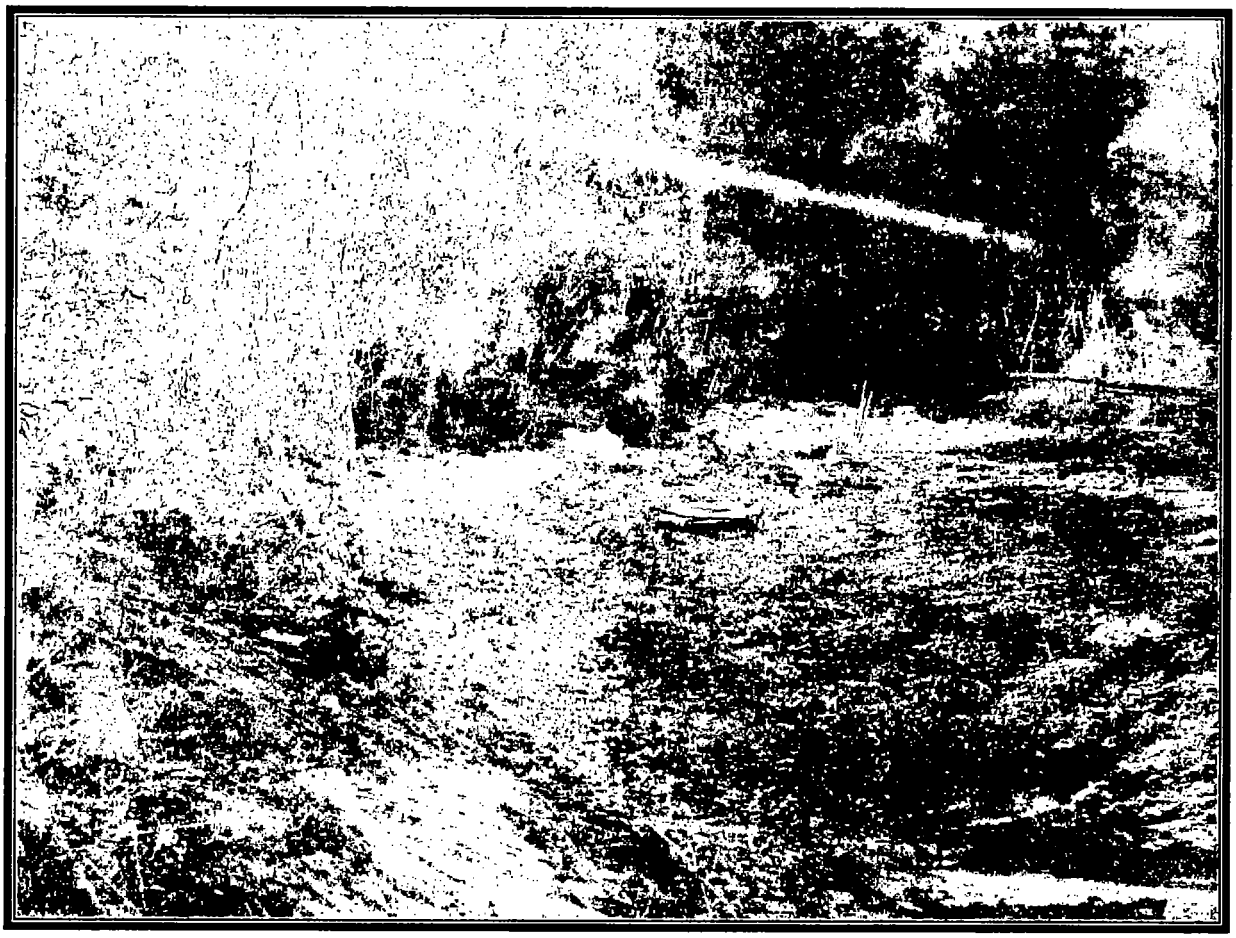
TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	West	**Date:**	January 8, 2009
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Perry Gaughan, EPA Region 4 OSC
Subject:	WRSCompass personnel excavating soil from the fence line ditch. The pin flags correspond to field testing locations in the ditch used to monitor the effectiveness of removal activities.		



OFFICIAL PHOTOGRAPH NO. 13
U.S. ENVIRONMENTAL PROTECTION AGENCY

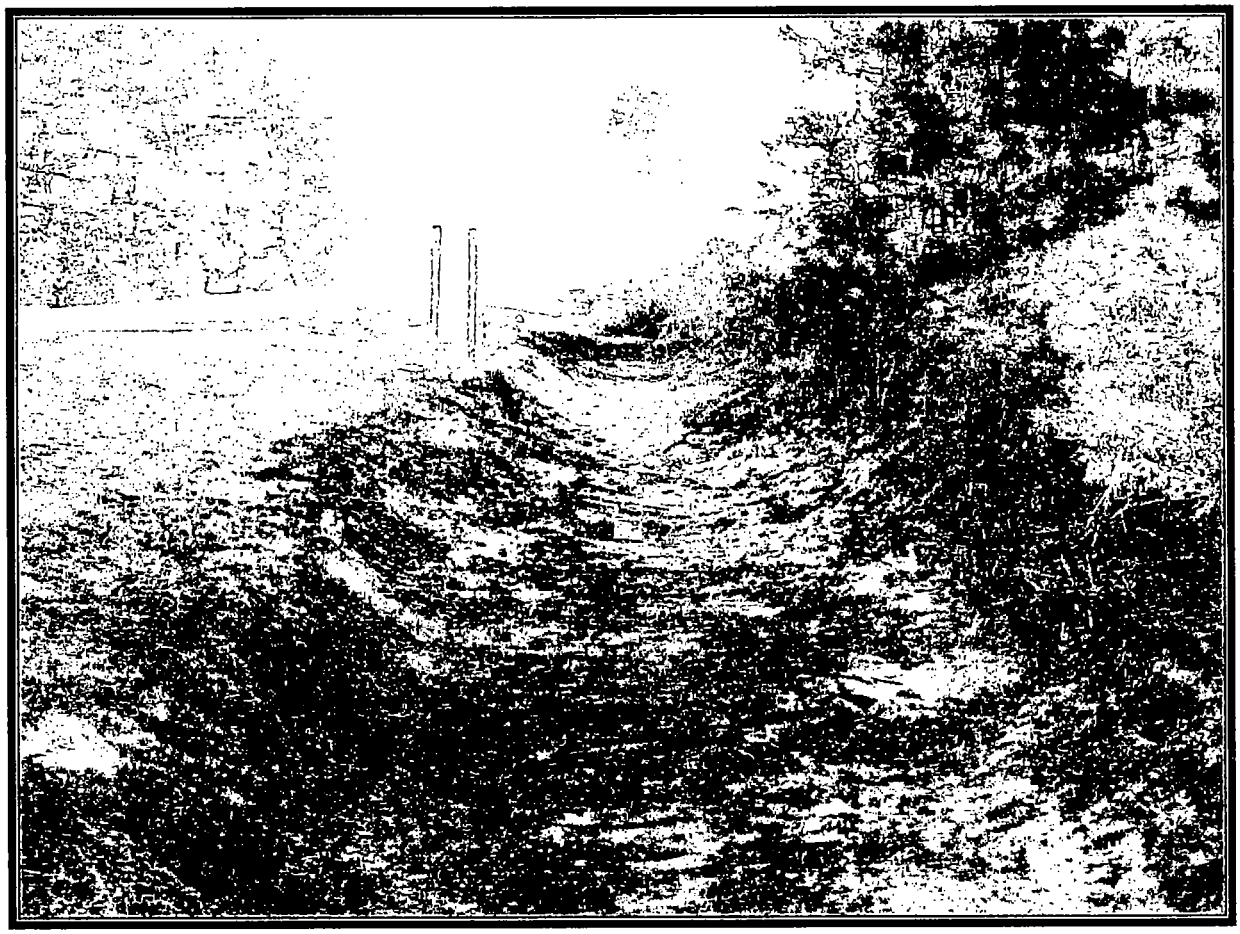
TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	West	**Date:**	January 8, 2009
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Perry Gaughan, EPA Region 4 OSC

Subject: A recovery sump being installed in the fence line ditch at the suspected point of entry to facilitate the recovery and removal of caustic liquids that continued to seep from the ground following excavation activities.



OFFICIAL PHOTOGRAPH NO. 14
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	West	**Date:**	January 8, 2009
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Perry Gaughan, EPA Region 4 OSC
Subject:	Completed recovery sump installed in the fence line ditch to facilitate the recovery and removal of caustic liquids that continued to seep from the ground following excavation activities.		



OFFICIAL PHOTOGRAPH NO. 15
U.S. ENVIRONMENTAL PROTECTION AGENCY

TDD Number:	TTEMI-05-001-0085	**Location:**	Port Wentworth Caustic Spill
Orientation:	South	**Date:**	January 8, 2009
Photographer:	Brian Croft, Tetra Tech START	**Witness:**	Perry Gaughan, EPA Region 4 OSC
Subject:	Excavation activities completed in the O'Leary Road ditch. The completed recovery sump is also visible.		

APPENDIX D

LOGBOOK NOTES

(10 Sheets)

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TTEMI-05-001-0085

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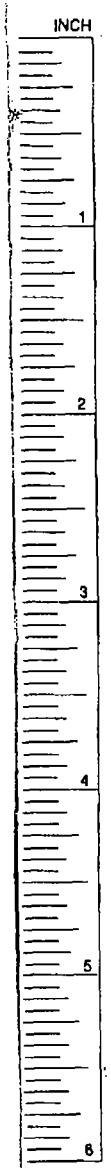
No. 391

12/29/08



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CONTENTS

PAGE	REFERENCE	DATE

12/29/08 Port Wentworth Caustic CKelley

0730 START Brian Croft & Quinn Kelley ~~de~~mob from Duluth, GA

1200 START arrives at Horizon Tank Lines in Port Wentworth, GA. Horizon allegedly dumped a caustic material into a ditch. The pH is 12 & is believed to be Sodium hydroxide. START meets w/ OSC Gaughn & US Coast Guard Keven Lynn & Caleb. Material is black. OSC Gaughn wants START to test the ditch material as well as material in the trucks to try and match. Horizon is known to transport sodium hydroxide.

1220 START Croft calls START John Schendel to discuss analyses to include metals per OSC Gaughn to test for Mercury.

1230 START will collect samples as waste & analyze for VOCs, SVOCs, metals + Hg, Pest, & Herb.

CKelley 12/29/08

12/29/08 Port Wentworth Caustic CKelley

1245 START contacts TetraTech Chemist Harry Ellis to discuss any additional analysis since there's a possibility of "black liquor" which is a by product of the paper/wood pulp industry in this area & involves a sulfide process. Tt Ellis suggests adding sulfides to the analyses.

1310 START does a site sketch

1325 START collects ~~PWC-HTL-WS-01~~ PWC-HTL-WS-01 from the ditch & likely dump site. START also collects a split sample for the PRP as well as a dupe. The pH of the liquid in the ditch is 13.

1405 START collects waste sample, ~~PWC-HTL-WS-02~~ PWC-HTL-WS-02 from the ditch along O'Leary Rd. PH = 10 or 11

1420 START Kelley begins to process the samples while START Croft & OSC Gaughn collect a sample of what the PRP says is "Slurry Sand." PWC-SAND-01

CKelley 12/29/08

12/29/08 Port Wentworth Caustic @Kelley

1430 OSC Gaughn informs START Croft that the Site name will be Port Wentworth Caustic.; therefore START relabels all samples with PWC. So HTL is now PWC. OSC Gaughn attempts to get permission to collect a sample from the PRP's tank..

1535 PRP John McKiethan w/ Horizon informs OSC Gaughn that a tank will arrive tonight around 1730. PRP McKiethan will Call OSC Gaughn when it arrives & OSC Gaughn will call START to come & sample the tank. Meanwhile, START will Check into hotel.

1730 OSC Gaughn Calls START Croft & informs him that the tank will not arrive until tomorrow at around 1000. START done for the day. Will meet OSC Gaughn at 0800 tomorrow.

@Kelley 12/29/08

12/30/08 Port Wentworth Caustic @Kelley

0800 START arrives onsite.

0820 OSC Gaughn onsite. OSC Gaughn speaks w/ the PRP about the tank. Horizon McKiethan says the tank will arrive around 1000. START prepares sample containers.

1000 ~~Tank arrives.~~ @Frac tank arrives to pump the liquid out of the ditch. Moran (the USCG Contractor) had already pumped 3,000 gal out of the ditch so far.

1030 Horizon tank arrives. START prepares to sample using a Sludge judge to collect the liquid from the top of the tankercar.

1050 START collects waste sample PWC-WS-03. According to Horizon, the liquid is 50% NaOH ~~Caustic~~ @. The pH is 14.

1115 START packs the samples into the cooler & demobs.

@Kelley 12/30/08

12/30/08 Port Wentworth Caustic Quinn Kelley

1530 START drops off samples at AES Lab & continue to the office.

1600 START arrives back at the Duluth office. START unloads truck & restocks.

Quinn Kelley 12/30/08

1/5/09 Port Wentworth Caustic B. Croft

1330 START onsite

- residual, white film has formed along ditch lines
- pH of caustic powder = 12 to 13

1430 Moran Environmental reps (Rob/Randy) onsite with vac truck to suck up accumulated liquids in ditch line

1510 Moran reps offsite

Moran stated that they pump approx 300 to 400 gallons each day

1515 OSC Gaughan onsite

1530 START offsite

BSC 1-5-09

1-6-09 Port Wentworth Caustic B. Croft

0745 START onsite

0800 OSC & WRS rep (Charlie) onsite to tour area and develop plan of action

0815 START offsite to purchase field supplies

0840 START returns to site measuring ditch lines and drawing sketch

1010 START begins to collect field test samples for pH analysis

1150 Sample collection complete

1200 START offsite to get distilled water for pH testing

1235 START returns to site - began pH testing

late note: Morgan reps (2) returned today to pump liquids from ditches

1350 WRS reps recieved loader from Hertz - awaiting arrival of excavator & rolloff boxes

1445 Hertz delivers excavator - WRS awaiting rolloffs - Horizon Tank Lines reps (4) onsite - they told WRS (Charlie) that they were going to collect some samples - START observed them standing in/around the sump where pH 14 liquids were documented along the fenceline ditch (probable point of entry

1530 Horizon reps now sampling in O'Leary Rd ditch line downgradient at culvert from fenceline ditch

BSC 1-6-09

1-6-09 Port Wentworth Caustic B. Croft

SAMPLE ID	LOCATION	pH
FT-1	O'Leary Rd - upgradient	7
FT-2		7
FT-3		7
FT-4		7
FT-5		7
FT-6	O'Leary Rd @ culvert from fenceline ditch	9-10 (liquid pH = 11)
FT-7	O'Leary Rd - downgradient	9-10 (liquid pH = 11)
FT-8		10-11
FT-9		7
FT-10		9-10
FT-11		12
FT-12		7
FT-13		7
FT-14		12
FT-15		11-12
FT-16		11-12
FT-17		9-10
FT-18		9
FT-19	fenceline - downgradient from PPOE	11-12
FT-20	● located at PPOE upgradient ASC	11
FT-21	upgradient at PPOE	7
FT-22		7
FT-23		7
FT-24		7

ASC 1-6-09

1-6-09 Port Wentworth Caustic B. Croft

1540 Horizon reps collecting samples are actually from SWS First Response

1610 SWS reps finished sampling activities

1630 WRS continues to wait for rolloff boxes

START offsite

BSC 1-6-09

1-7-09 Port Wentworth Caustic B Croft

0745 START onsite

- WRS reps still waiting for rolloff containers - received one box, but it is for non-haz waste

0800 band of rain/storms/wind is moving through the area

0820 WRS excavates test pit #1 approximately 60 ft upgradient of sump in fenceline ditch

0830 START collects PWC-S-3 from depth of approx 8 ft. in test pit #1 - no signs of contamination observed in the test pit - sand & clay

0845 WRS excavates test pit #2 approximately 30 ft to the east of the sump in fenceline ditch

0855 START collects PWC-S-4 from depth of approx 10 ft in test pit #2 - no signs of contamination observed in the test pit - sand & clay

0900 test pits backfilled

WRS moving excavator & loader into place @ downgradient end of ditch to begin removing soil/ resid wet waste

0930 WRS continues to excavate soil from O'Leary Rd ditch beginning @ the north/downgradient end and moving to the south

note: GA DNR Jeff Barnes onsite to inspect site conditions and speak w/ OSC

BSC 1-7-09

1-7-09 Port Wentworth Caustic B. Craft

GPS information:

FT-1	N 32.19087361	FT-13	N 32.19465316
	W 81.19132545		W 81.19076156
FT-2	N 32.19127934	FT-14	N 32.19418616
	W 81.19124371		W 81.19074053
FT-3	N 32.19167960	FT-15	N 32.19432320
	W 81.19119541		W 81.19070998
FT-4	N 32.19223375	FT-16	N 32.19445938
	W 89.19189344		W 81.19068828
FT-5	N 32.19264105	FT-17	N 32.19459813
	W 81.19102311		W 81.19067348
FT-6	N 32.19305316	FT-18	N 32.19474467
	W 81.19094406		W 81.19063671
FT-7	N 32.19318924	FT-19	N 32.19307722
	W 81.19092928		W 81.19109271
FT-8	N 32.19331699	FT-20	N 32.19309718
	W 81.19092615		W 81.19127959
FT-9	N 32.19349830	FT-21	N 32.19314301
	W 81.19086023		W 81.19153081
FT-10	N 32.19363706	FT-22	N 32.19317358
	W 81.19082813		W 81.19172516
FT-11	N 32.19378153	FT-23	N 32.19319667
	W 81.19080297		W 81.19191183
FT-12	N 32.19391627	FT-24	N 32.19324128
	W 81.19075544		W 81.19217485

BSC 1-7-09

1-7-09 Port Wentworth Caustic B. Craft

GPS Information:

TP-1 N 32.19315268 TP-2 N 32.19319994
W 81.19159571 W 81.19128539

0935 START begins to collect GPS data for sample & test pit locations

1100 GPS data collection complete

START collects pH confirmation samples @:

FT-18 - pH = 9

FT-17 - pH = 7

FT-16 - pH = 7

note: black liquid w/ pH ~ 14 observed & documented seeping from bottom of O'Leary Rd ditch bank approx 20-ft south of location FT-16 (not yet excavated)

1145 inspected O'Leary Rd ditch downgradient from where FT-18 is located w/ OSC - observed several small puddles w/ pH ~ 13 to 14 - OSC will have WRS call Moran back out w/ vactruck & suck up liquids - wait & see if they continue to show up

1200 START offsite for lunch & to get access email to send GPS data to GIS Tech for mapping

1245 START returns to site

WRS resumes excavation along O'Leary Rd.

1300 2 more rolloffs delivered - 4 total now onsite

1320 START collects pH confirmation samples @

FT 15 pH = 7

FT 14 pH = 7

BSC 1-7-09

1-7-09 Port Wentworth Caustic B. Croft

1400 WRS continues excavation of O'Leary Rd. ditch
- approx. 200+ ft. excavated so far - using trackhoe to excavate and place soil into bucket of front end loader, then transport & place into rolloff boxes @ staging area

1435 Moran reps back onsite to pump out liquids from O'Leary Rd, including pools observed in woods north of current area of excavation (before the point where ditch merges w/ flowing creek)

1530 Moran reps offsite

note: 6 rolloff boxes currently onsite, but only 2 are DOT-worthy for haz mat - others are being used to keep soil off ground and will be transferred to certified containers when they are available

1605 START collects pH confirmation samples @:
FT-13 - pH = 7
FT-12 - pH = 7

1705 START collects pH confirmation sample @:
FT-11 - pH = 7

1720 WRS packing equipment for the evening

1730 START offsite

BSC 1-7-09

1-8-09 Port Wentworth Caustic B. Croft

0705 START onsite - ops/safety mtg.
- continue excavation of ditchlines
- install sumps/trench drains

note: rolloff summary so far
- 2 non-DOT boxes full - to be live-loaded into dump trucks for T&D at future date
- 2½ DOT boxes full - to be transported as is
- approx 350 ft (linear) excavated so far
- approx 300-350 ft (linear) remain to be excavated including source area

GPS data for background soil samples collected for lab analysis by OX Gaughn:
PWC-S-01 N - same as FT-21
W
PWC-S-02 N 32.19117110
W 81.19128042

0830 WRS continues excavation of O'Leary Rd. ditch line in vicinity of FT-10

OSC requested soil samples to be collected
- @ FT-20 (pre-excavation)
- @ FT-6 (pre-excavation)
- one composite sample from O'Leary Rd ditch (post excav)

0900 WRS continues excavating ditch along O'Leary Rd near FT-9-10

START offsite for field supplies

BSC 1-8-09

1-8-09 Port Wentworth Caustic B. Croft

0930 START returns to site

1000 START collects PWC-S-05 (soil sample) from O'Leary Rd. ditch @ FT-6 location - pre-excavation - white residual material mixed w/ soil

1045 WRS continues excavation at O'Leary Rd ditch near FT-7-8

1200 WRS breaks for lunch

1220 START collects PWC-S-06/07 (dup) (soil samples) @ FT-20 location - high moisture - high pH (~13)

1235 WRS resumes excavation - O'Leary Rd ditch is finished to approx. FT-7 location - FT-6 location has free liquid so they are using/excavating soil from the fenceline ditch east of FT-20 location and move it to O'Leary Rd. FT-6 location to help solidify soil there, which will then be excavated

1330 WRS resumes excavation of O'Leary Rd. ditch in vicinity of FT-6/FT-7 areas

1355 START collects composite soil sample PWC-S-8 - collected from 5 locations: FT-9; FT-11; b/t FT 13/N; FT-16; FT-18

1405 WRS continues excavation @ FT-6 location - building a berm downgradient & digging a sump @ FT-6 to install a french drain

BSC 1-8-09

1-8-09 Port Wentworth Caustic B. Croft

1410 START collects pH confirmation samples @:
- FT-10 - pH = 7
- FT-9 - pH = 7
- FT-8 - pH = 7
- FT-7 - pH = 11-12

1515 Sump/french drain complete @ FT-6 location WRS resumes excavation @ fence line ditch

1610 WRS complete w/ ditch excavation along fenceline - installing sump/french drain @ FT-20 location

note: 12 rolloffs onsite
1 frac tank (~ 1/4 - 1/3 full)

1705 Sump/french drain complete @ FT-20 location WRS redistributing soil from non-DOT rolloffs to certified DOT rolloffs

1725 WRS covering last off rolloff boxes for demobe

1735 START offsite

BSC 1-8-09

APPENDIX E

TABLE OF WITNESSES

(One Page)

TABLE OF WITNESSES

PORT WENTWORTH CAUSTIC SPILL
PORT WENTWORTH, CHATHAM COUNTY, GEORGIA

Perry Gaughan
On-Scene Coordinator (OSC)
U.S. Environmental Protection Agency
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Atlanta, Georgia 30303
Telephone No.: (404) 562-8773

Kevin Lynn
U.S. Coast Guard Marine Safety Unit Savannah
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Savannah, Georgia 31401
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Jeff Barnes
Environmental Emergency Specialist
Georgia Department of Natural Resources
Environmental Protection Division
6555 Abercorn Street, Suite 130
Savannah, Georgia 31406
(912) 353-3225

John McKeithan
Horizon Tank Lines
O'Leary Road
Port Wentworth, Geogia

Brian Croft, Site Manager
Quinn Kelley, Team Member
Tetra Tech Region 4 Superfund Technical Assessment
and Response Team (START)
1955 Evergreen Boulevard, Suite 300
Duluth, Georgia 30096
Telephone No.: (678) 775-3080

APPENDIX F

DATA VALIDATION REPORTS

AND

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

LABORATORY ANALYTICAL DATA PACKAGES

(1,758 Pages)

(Electronic copy on compact disc)

ATTACHMENT 1

CERTIFICATE OF ANALYSES

SODIUM HYDROXIDE MEMBRANE

(One Page)

ATTACHMENT 2

NATIONAL RESPONSE CENTER

INCIDENT REPORT NO. 893294

(Three Pages)

ATTACHMENT 3

U.S. COAST GUARD

SITUATION REPORTS

(11 Pages)